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Urbana, Illinois

September, 1982

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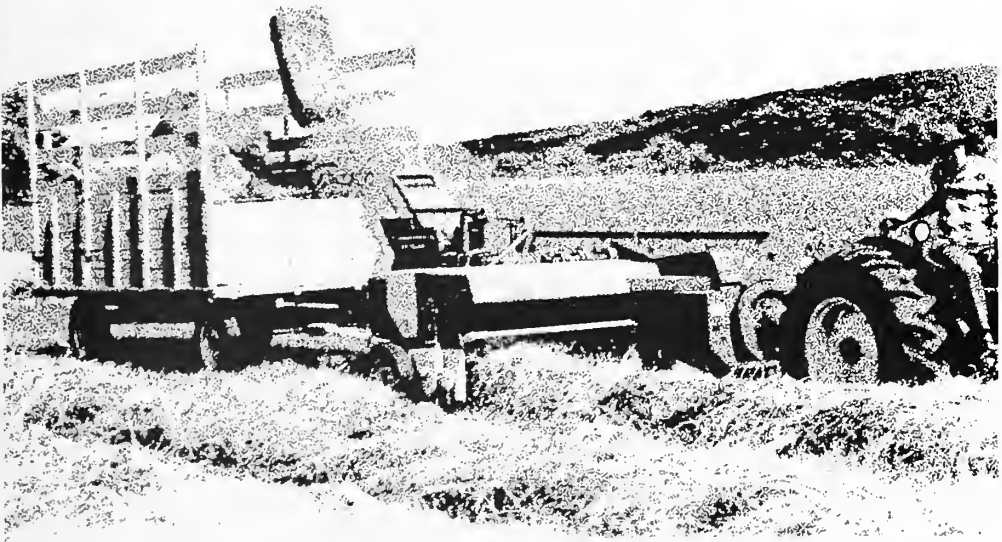
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Hay in 70 Days

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Prepared by Don W. Graffis, Extension Agronomist

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ARE YOU IN NEED OF EXTRA HAY THIS YEAR? If so, you can seed alfalfa or a mixture of alfalfa and red clover in early April and harvest your first hay crop about seventy days later. If you want to establish a hay field with a high yield potential, seed alfalfa alone or alfalfa and red clover in the spring without a companion crop. The result will be a thicker, more vigorous stand than if you had seeded the field in oats or wheat.

Northern and central Illinois growers usually have adequate summer moisture to keep a new alfalfa seeding growing well, and yields of 3 to 5 tons of dry hay per acre can be expected at least 80 percent of the time. The great water-holding capacity of the soils in these regions also helps make spring seedings successful.

Southern Illinois growers are less likely to obtain high yields from spring seedings because of the usual summer drought and the low water-holding capacity of the soils in that part of the state. Hotter weather, more severe weed problems, and the potential for greater insect damage may also reduce yields. Spring seedings can be successful in southern Illinois, but more effort must be made to control weeds and insects.

Selecting and Preparing a Field

An important first step toward a successful spring seeding is to select a well-drained field. Soil with good internal drainage is a big asset in alfalfa and red clover production. If the internal soil drainage is poor, good surface drainage is even more critical because ponding water is devastating to these perennial legumes. Successful stands of alfalfa and red clover can be established and maintained on claypan or fragipan soils if the surface drainage is adequate.

A second important step is to apply limestone, phosphorus, and potassium as needed to obtain the proper soil pH and fertility. For the most efficient alfalfa production, the soil pH should be between 6.8 and 7.0. The phosphorus test should be between 40 and 50 pounds per acre, depending on your soil type. The potassium test should be 260 pounds per acre for sandy and light-colored fragipan soils and 300 to 400

pounds per acre for darker, fine-textured soils. Applying fertilizer at the proper rates will gradually increase soil nutrients to the desired levels and help ensure good yields.

Limestone is best applied several months before the seedbed is prepared. If that is not possible, however, be sure to apply it at the time of seedbed preparation because limestone is important in achieving a high yield. Phosphorus and potassium fertilizer may be applied before or during seedbed preparation.

The crop or crops previously grown in the field may influence the ability of alfalfa to establish itself and grow vigorously. If alfalfa was grown in the field in previous years, the vigor of the new alfalfa seedlings and the growth of the young plants will be reduced. As Table 1 shows, alfalfa does best when it follows corn. It also grows quite well after small grains or other grasses. It usually does not produce quite as well when grown after soybeans, but the yield is still distinctly better than that obtained when the preceding crop was alfalfa or clover.

When selecting a field for your alfalfa seeding, consider whether there is any risk of herbicide carry-over from the previous crop. The carry-over with triazine herbicides has occasionally been severe enough to damage newly seeded alfalfa.

Table 1. Yield and Stand of Alfalfa in the Sixth Year of Various Crop Rotations

Rotation	Dry matter yield, tons per acre	Stand, no. of plants per square foot
Corn-alfalfa	3.8	4.9
Corn-soybeans-alfalfa	3.5	4.1
Alfalfa-alfalfa	1.9	2.1

Based on results of tests conducted at Urbana, Illinois.

Planting

For the best results from your spring seeding, select a top-yielding variety. Yield trials conducted by the University of Illinois provide information on the performance of many different varieties. The high-yielding varieties will likely have vigorous seedlings, a rapid growth rate, and the ability to recover rapidly from drought and insect attacks. Most top varieties also have some resistance to many of the disease and insect pests that attack alfalfa or red clover.

Plant as soon as the seedbed can be prepared. Early April seedings have been very successful in central and northern Illinois. Later seedings are more likely to suffer from dry weather (which can limit plant growth), weed competition, and leafhopper feeding. Southern Illinois farmers should seed in the middle or late part of March if possible.

Before planting, make sure the seedbed has been well prepared. Most of the debris from the previous crop should be incorporated, and the soil should be weed-free and firm, as shown in Figure 1.



Figure 1. A well-prepared seedbed is firm and free of weeds.

It is important to use a good seeder that can be calibrated accurately and that distributes the seed uniformly. A solid stand of alfalfa or red clover will out-yield a ragged stand and will compete with weeds more effectively.

The double-corrugated-roller seeder is an excellent choice for forage crops. It drops seed uniformly between two corrugated rollers. The first roller provides additional firmness to the seedbed, and the second roller

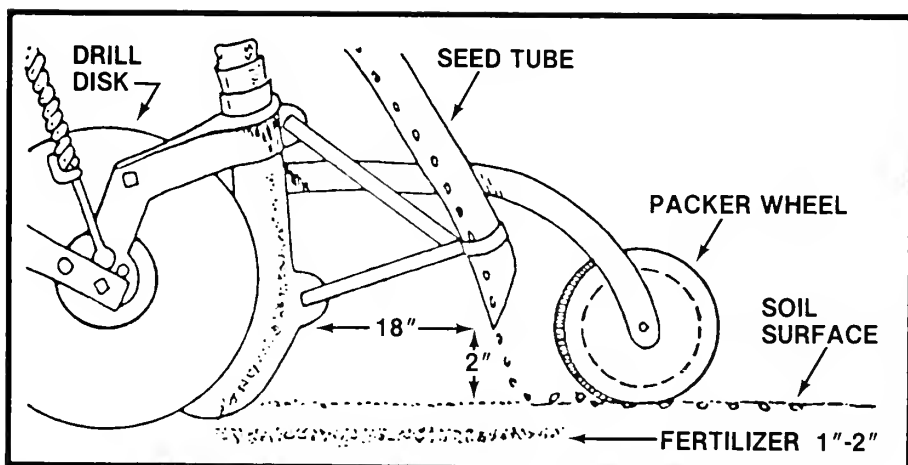


Figure 2. Placing high-phosphate fertilizer and seed with a grain drill.

pushes the seeds into contact with the soil. Most of the seeds are covered lightly, which is desirable.

For band seeding — another good method — a grain drill with a legume seed box is used. As shown in Figure 2, hoses from the legume box carry the seed to the soil surface, trailing the drill discs. Use the drill to place 50 to 100 pounds of phosphorus fertilizer per acre about 1 to 2 inches below the soil surface. Place the seed directly above this fertilizer band. For best results, packer wheels should follow directly over the seed, pressing it into the soil surface.

Which is the better seeding method? In the Illinois studies summarized in Table 2, the band seeding method resulted in yields equal to or slightly greater than those obtained with broadcast seedings. Soils that are low in readily available phosphorus have produced better yields with band seeding. Low available phosphorus may result from low natural fertility (as at the Brownstown test site), inadequate fertilization, low pH, or cold, wet soil (as at the DeKalb site).

Table 2. Alfalfa Seeding Methods and Yields at Illinois Test Sites

Location and number of trials	Average annual yield, tons of dry matter per acre	
	Band seeding	Broadcast seeding
DeKalb, two trials.	4.57	4.48
Urbana, three trials.	5.60	5.60
Brownstown, two trials.	3.11	2.92

Controlling Weeds and Insects

Weed control will usually be necessary to ensure a high yield. If legumes alone are seeded, preemergence grass-killing herbicides may be used. Balan and Eptam, which are approved for use in Illinois, control germinating grasses and some broadleaf weeds. The herbicide should be applied during preparation of the seedbed and incorporated by disking. If grasses are seeded with the legumes, a postemergence herbicide — for example, 2,4-DB (Butoxone or Butyrac) — may be used to control broadleaf weeds such as lambsquarters and pigweed. Applications of 2,4-DB are usually made about 30 days after seeding. They must not be made before the legumes have emerged because the herbicide can injure germinating legumes.

Alfalfa is usually attacked by the potato leafhopper. This insect sucks juices from the center of alfalfa leaflets, causing a V-shaped area of yellowing. The leafhopper usually invades Illinois in late May to early June. Alfalfa seeded early may be large enough to harvest before leafhoppers become a serious problem. When leafhoppers do arrive, however, and when they infest new alfalfa seedlings, it is very important to control them. Otherwise the plants are weakened, become very stunted, and turn yellow or brown. Serious infestations may kill some plants.

Several insecticides control leafhoppers effectively. For suggested pesticides and application rates, consult your county Extension adviser and Illinois Cooperative Extension Service Circular 899, *Insect Pest Management Guide: Field and Forage Crops*. Because leafhoppers remain in the area throughout the summer, it may be necessary to apply an insecticide two or three times during the season.

Red clover is not attacked by leafhoppers because the hairy leaf and stem discourage the insects from feeding. Ladino clover has few if any hairs and is readily attacked by leafhoppers.

Harvesting

The first harvest of spring-seeded alfalfa or red clover should be taken when the plants are at about half bloom. This growth stage will be reached about seventy days after an early April seeding if insufficient or excessive moisture has not retarded growth. Make subsequent harvests at 32- to 35-day intervals. The crop should be cut to a stubble height of 1 to 2 inches at each harvest. The last cutting should be made on September 1 in northern Illinois, September 10 in central Illinois, and September 20 in southern Illinois. No late fall harvest should be taken on new stands.

References for Further Reading

Readers wanting additional information on alfalfa production and pest management may obtain copies of the following publications from the Office of Agricultural Publications, 123 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801, or from a county Extension adviser:

Alfalfa: A Guide to Production and Integrated Pest Management in the Midwest. North Central Regional Extension Publication 113. (Includes color photographs of insect pests and disease symptoms.) 224p.*
Alfalfa Weevil Pest Management Program. Circular 1136. 8p.

The following publication is available from the Department of Agronomy, University of Illinois, N-305 Turner Hall, 1102 South Goodwin Avenue, Urbana, Illinois 61801:

Alfalfa Analyst. Published by the Certified Alfalfa Seed Council.*

* This publication is distributed at cost. Contact the office listed for price information.



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